

# HENRY (YUHAO) ZHOU

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## EDUCATION

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### University of Toronto, Canada

Bachelor of Applied Science

*Specialist in Computer Engineering*

*Minor in Robotics and Mechatronics*

Advisor: Prof. Sanja Fidler and Prof. Jimmy Ba

Sep. 2014 - Present

Cumulative GPA: 3.92/4.00

Rank: Top 2%

### Peking University, China

Summer Exchange Student

*Associate Degree in Economics and Literature*

Summer 2016

Straight 4.0/4.0

## PUBLICATION

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- **Y. Zhou\***, T. Wang\*, S. Fidler, J. Ba. *Neural Graph Evolution: Automatic Robot Design* (\* denotes equal contribution. *International Conference on Learning Representations'19*)
- **Y. Zhou**, M. Tapaswi, S. Fidler. *Now You Shake Me: Towards Automatic 4D Cinema* (**Spotlight** in *Computer Vision and Pattern Recognition'18*)

## RESEARCH EXPERIENCE

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### University of Toronto, Vector Institute

*Research Assistant*

January 2018 - Present

Advisor: Prof. **Sanja Fidler**, Prof. **Jimmy Ba**

- Project on robotic structure design using genetic algorithms.
- Proposed using graphs to model RL agent and designed methods to modify graphs for efficient search.
- Designed methods to visualize the evolutionary progress and the genealogy tree in the genetic algorithm.
- Project on using Graph Network for learning dynamics in model-based reinforcement learning.
- Improved graph network for efficiently learning dynamics and discriminating graph isomorphism.
- Open-sourced a customized graph neural network library implemented in PyTorch and Tensorflow.

### University of Toronto

*Capstone Research*

May 2018 - Present

Advisor: Prof. **Stark Draper**

- Project on power-efficient hand gesture classifier for artificial prostheses control.
- Designed and implemented distributed machine learning optimization method using AWS Lambda service.
- Designed gesture classifier on electromyography (EMG) data for real-time processing.
- Benchmarked the performance of deep learning and signal processing methods for gesture recognition.
- Leading the senior-year capstone design team for project management, documentation, and experiments.

### University of Toronto

*Research Assistant*

January 2017 - November 2017

Advisor: Prof. **Sanja Fidler**

- Project on analyzing physical interaction in movies for automatic annotation of 4D effects in movies.
- Led the project in semantic classification and detection of physical interactions, such as splash, in movies.
- Proposed and designed multi-modal neural networks for processing visual and acoustic features. Performed ablation studies on the usefulness of each modality, and optimized the performance of the joint network.
- Created a crowd-sourcing website and trained human annotators to get high-quality annotations.
- Researched and trained deep neural networks on various audio and video datasets such as SoundNet.

## INDUSTRY EXPERIENCE

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**Nvidia** Jan 2019 - Present  
*Deep Learning Intern* Toronto, Canada

- Currently working on computer vision project supervised by Prof. Sanja Fidler and Prof. Antonio Torralba.

**Intel Corp.** May 2017 - December 2017  
*Software Engineering Intern* San Jose, CA

- Led the project of a cross-version testing pipeline for user designs in Quartus synthesizing team. This project is 10x more efficient comparing to the previous version of the testing framework.
- Optimized error message prompting during compilation for better user experience in Quartus.

**Oracle Corp.** July 2015 - August 2015  
*R&D Department Intern* Beijing, China

- Organized and managed cloud computing resources for R&D department in Cloud Computing team.
- Provided supporting service to Oracle Japan's team by resolving internal service tickets.

**Huawei Technologies** May 2015 - June 2015  
*Software Engineering Intern* Beijing, China

- Transplanted automated testing scripts for testing of Ascend Series in Automated Testing team.
- Focusing on the functionalities of Settings, Clocks, and Photos, the testing scripts covers more than 40% of the entire functionalities of Huawei's EMUI operating system.

## TALKS AND PRESENTATIONS

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<b>Talk</b>	Google Brain - Talk on <i>A Topology Space Odyssey</i> Vector Robotics Summer School - Talk on <i>Self-adaptive Robots and Evolution</i>
<b>Presentation</b>	University of Toronto CV Group meeting on Scattering Transform Vector Institute AWS Usage showcase meeting on Neural Graph Evolution

## AWARDS

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<b>Research</b>	Edith Grace Buchan Scholarship (Summer Research 2018) University Conference Travel Grant (CVPR18, NeurIPS18)
<b>Academic</b>	Dean's List (2015 - Present) (Awarded to high academic performing students)
<b>Competition</b>	Best First Year Team in UTEK Software Design competition (2015)

## SKILLS

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<b>Programming</b>	Python, MATLAB, C/C++, JavaScript, Java, SQL, Verilog
<b>Framework</b>	PyTorch, Tensorflow, Flask, Numpy, OpenCV, SKLearn
<b>Markup</b>	HTML/CSS, LaTeX, Markdown

## EXTRA-CURRICULAR

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<b>Coursera</b>	Served as the (Chinese) subtitle reviewer & performed final reviews for Calculus I (2015) Served as the community mentor for Machine Learning (2016) Served as the (Chinese) subtitle translator for the course Cryptography I (2016)
<b>Volunteer</b>	IEEE Student Branch at University of Toronto Webmaster (2015 - 2016) IEEE Student Branch at University of Toronto Computer Chapter (2016) University of Toronto ECE Department mentor (2016 - 2017) University of Toronto Orientation Week Catering Team (2015)
<b>Sports</b>	ECE Thunder Basketball Team (2015, 2016 Engineering League Champion) University of Toronto SKULE Badminton Club (2014 - 2015)